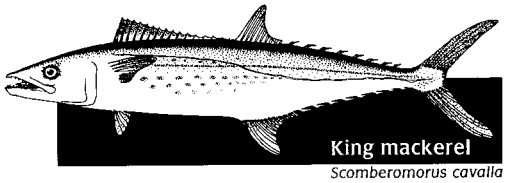
Unit 7

Atlantic/Gulf of Mexico Coastal Migratory Pelagic Fisheries

Introduction

Coastal pelagic fishes inhabiting waters off the southeastern U.S. include king mackerel, Spanish mackerel, cero, dolphin, and cobia. These species range in coastal and continental shelf waters from the northeastern U.S. through the Gulf of Mexico and the Caribbean Sea and as far south as Brazil. Coastal pelagics are fast swimmers that school and feed voraciously, grow rapidly, mature early, and spawn over many months.



King mackerel
Scomberomorus cavalla

U.S. and Mexican commercial fishermen have fished Spanish mackerel since the 1850s and king mackerel since the 1880s. The Spanish mackerel fishery began off New York and New Jersey but shifted southward through the decades to the southern U.S. Atlantic and Gulf of Mexico. In 1990, over 90% of the commercial catch was landed in Florida. Although early commercial fisheries harvested Spanish mackerel by hook and line, nearly all the commercial catch now is taken by run-around gill net. A recreational fishery also exists for Spanish mackerel and accounts for about 25-42% of all the Spanish mackerel landed.

Table 7-1. Atlantic Coastal Migratory Pelagics

Productivity in metric tons and status of fisheries resources

Species / Area	Recent Average Yield (RAY)[1]	Current Potential Yield (CPY)	Long-Term Potential Yield (LTPY)	Fishery Utilization Level	Stock Level Relative to LTPY
Dolphin	4,430	Unknown	Unknown	Unknown	Unknown
King mackerel					
Gulf of Mexico	3,547	2,024	9,750	Over	Below
Atlantic	3,265	5,581	3,632	Under	Near
Spanish mackerel					
Gulf of Mexico	2,581	3,956	3,702	Full	Near
Atlantic	2,871	2,946	3,702	Full	Near
Cobia	1,168	Unknown	998	Unknown	Unknown
Cero	22	Unknown	Unknown	Unknown	Unknown
Total	17,884	20,127	26,236		

[1] 1991-93 average.

King mackerel are fished commercially from Chesapeake Bay southward. Four major production areas exist: North Carolina; lower Florida east coast (Cape Canaveral to Palm Beach); the Florida Keys; and Grande Isle, La. The Louisiana fishery began in the early-1980s; the area was believed to harbor older females that served as a major spawning population for Gulf of Mexico king mackerel. Unconstrained fishing mortality was believed to be high on these fish during the early-1980s, and these stocks currently comprise about 31% of the commercial quota for the Gulf regulatory group. Landings, which approached 680 t in 1983, were reduced one-half to two-thirds by federal quota management from the mid-1980s to the present.

Through the years, the commercial king mackerel vessels have employed gillnets, troll lines, handlines, purse seines, otter trawls, and pound nets. King mackerel sport fisheries exist off many southeastern states throughout the year. Commercial yields mostly were unregulated until the mid-1980s. Recreational landings are thought to have been reduced by an expanding commercial run-around gillnet fishery in the 1970s and a driftnet fishery in the late 1980s.

Coastal pelagics are co-managed under the Coastal Migratory Pelagic Resources FMP and regulations adopted by the South Atlantic and Gulf of Mexico FMCs and implemented by NOAA Fisheries. Total allowable catch and commercial and recreational allocations are established for two distinct migratory groups of king and Spanish mackerel: the Gulf group and the Atlantic group. Acceptable biological catches are estimated for separate geographical areas within the Gulf migratory group. Quota management began in the 1985-86 fishing year. Presently both commercial and charterboat operators must hold federal permits to fish for king mackerel, Spanish mackerel, or other coastal pelagics. Recreational catches are regulated by creel and size limits. In addition to quota limits, commercial catches must comply with minimum size restrictions and, off some states, daily landing limits and/or trip limits apply. Currently, only U.S. fishermen are regulated, while Mexican fishermen ar not. Mexican catches are thought to be large relative to the U.S. fishery.

Species and Status

Recreational fishermen caught 8,000-17,000 t/year of coastal pelagic species, and commercial fishermen caught 5,000-14,000 t/year during 1979-91. King and Spanish mackerel account for about 95% of all coastal pelagic species harvested (Fig. 7-1, 7-2). In addition to king and Spanish mackerel, Atlantic dolphin and cobia contributed significantly to the total recreational yield of coastal pelagics. Some cobia are incidentally caught by commercial mackerel fishermen. Cero are relatively unimportant and are usually taken in other fisheries. Cero are not known to form large schools and are more difficult to target as a single species; in general they do not contribute significantly to coastal pelagic catches.

As a group, coastal pelagics yield only about 68% of their long-term potential (Table 7-1), and certain species are fished near or over maximum production levels. Three of the four mackerel stocks are considered overfished because of previous overexploitation and have been managed under rigid rebuilding schedules since 1985. The 1995/1996 Atlantic Spanish mackerel spawning potential ratio (SPR) is estimated to be 55% of its maximum potential. It is believed that fishing mortality from the shrimp bycatch fishery is greater than currently anticipated. Additional information is needed to quantify this source of mortality. Gulf Spanish mackerel were removed from overfished status in 1995 following a period of regulation to rebuild the stock that began in 1987. The 1995/1996 SPR has been estimated to be 29% of the maximum potential for Gulf Spanish mackerel. Currently, fishing mortality is less than $F_{30\% SPR}$, but additional information is needed on the exact level of bycatch to evaluate the stock status with more certainty.

The Gulf king mackerel stock is believed to have a large LTPY, but it is severely depleted. Recent average annual production is at 22% of its maximum level, and major stock reductions were due to excessive harvests from the late-1970s through the early-1980s. Absence of fishing controls and sparse data hampered conservation until 1986.

The Atlantic king mackerel group is near LTPY. Catches have remained stable since 1981 with annual total allowable catches (TACs) not reached in most years. Bycatch of Atlantic king mackerel is assumed low. The 1995-96 estimated SPR level is 55% of the maximum level.

Accurate assessment of the status of cobia and dolphin is not yet possible. Atlantic cobia yields have ranged from 351-627 t since 1987. Gulf cobia yields are about 1.3-23 times that of Atlantic cobia. Fishing mortality is assumed to be low for the Atlantic group, and Gulf cobia are believed to be more heavily exploited. The 1994 SPR calculation for Gulf cobia was about 25%. Management of cobia stocks assumes two separate stocks for assessment. Cobia and dolphin mostly are caught by recreational anglers, but data needed to assess LTPY are limited. In addition, updated information is needed to investigate the possibility of separating cobia stocks into Gulf and Atlantic groups. Also, refined estimates of cobia bycatch and natural mortality rate are needed to improve assessment of stock status.

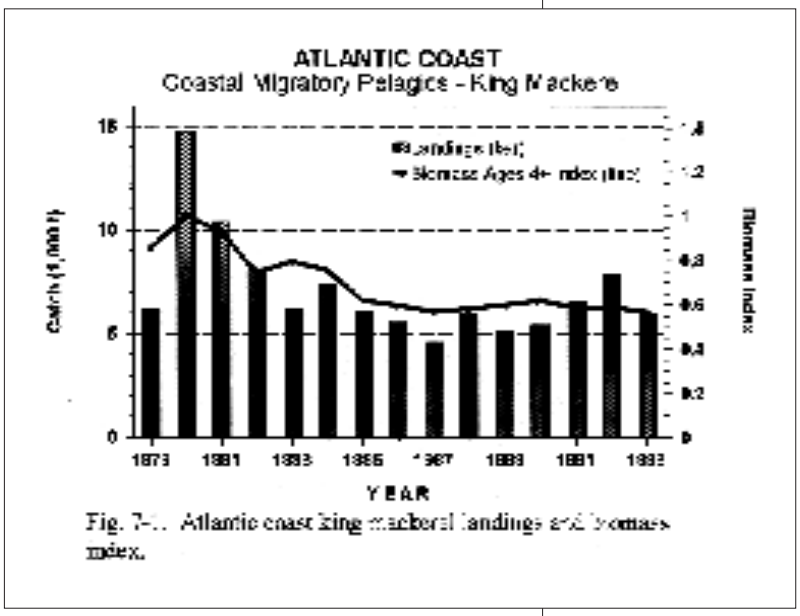


Fig. 7-1. Atlantic coast king mackerel landings and biomass index.

Atlantic King Mackerel Landings (t)

1992	7,900
1993	6,000

Issues

Transboundary Stocks and Jurisdiction

Effective management of migratory species will continue to require the coordination of Federal, state, and international regulatory actions. Accurate determination of the status of western Gulf of Mexico resources will require an increase in the information base on Mexican catches and their associated biological data.

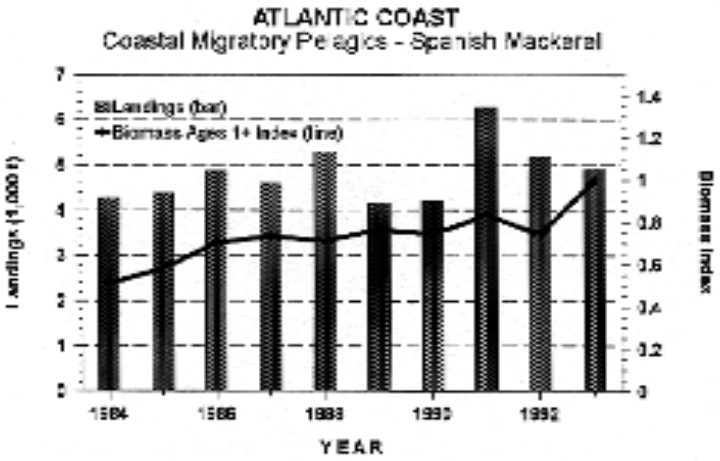


Fig. 7-2. Atlantic coast Spanish mackerel landings and biomass index.

Atlantic Spanish Mackerel Landings (t)

1992	5,200
1993	4,900

Allocation

Allocation of TAC between recreational and commercial users remains an important issue. Future allocation decisions will require an increase in the precision and accuracy of user-specific harvest levels and in the understanding of the spatial segregation of the resource. ❑